

Taxonomy of Yellow koji mold (*Aspergillus flavus/oryzae*) in Korea

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Koji molds are comprised of yellow, black and white. Black and white koji molds were recently re-visited by this author and it is concluded that they consists of *Aspergillus luchuesnsis*, *A. niger* and *A. tubingensis*, and the most important species for alcoholic beverage production is *A. luchuensis*. In the case of yellow koji mold, it is comprised of *Aspergillus oryzae*, *A. sojae* and *A. tamari*. In the case of *A. sojae*, the species is scarcely isolated from nature and rarely used for industry in Korea. *Aspergillus tamari* is often isolated from traditional Korean *Meju*, a fermented soybean product, and the classification of the species is clear. However, in the case of *A. oryzae*, differentiation between *A. oryzae* and *A. flavus* is still in controversy. In this study, we collected 415 strains of *Aspergillus flavus/oryzae* complex from air, rice straw, soybean, corn, peanut, arable soil and *Meju* in Korea and we examined the aflatoxin producing capacity of the strains. The *norB-cypA*, *omtA* and *aflR* genes in the aflatoxin biosynthesis gene cluster were analyzed. We found that 367 strains (88.4%) belonged to non-aflatoxigenic group (Type I of *norB-cypA*, I B-L-B-, I C-AO, or I A-L-B- of *omtA*, and AO type of *aflR*), and only 48 strains (11.6%) belonged to aflatoxin-producible group (Type II of *norB-cypA*, I C-L-B+/B- or I C-L-B+ of *omtA*, and AF type of *aflR*). In the case of *A. flavus/oryzae* strains from *Meju*, almost strains (178/192, 92.7%) belonged to non-aflatoxigenic group and only 14 strains (7.3 %) belonged to aflatoxin-producible group. It is proposed in this study that non-aflatoxigenic strain from *Meju* is classified as *A. oryzae*, considering that *Meju* is food material.